

CLAIMS

1. Self contained underwater breathing apparatus comprising a first stage gas pressure regulator adapted for connection to a breathing gas supply cylinder to reduce the pressure of gas therein to a medium pressure gas, and via a hose to a second stage gas pressure regulator to reduce the medium pressure gas to a pressure suitable for breathing; characterised by means contained within the first stage regulator to monitor the pressure of said medium pressure gas and to transmit a signal representative thereof to an indicator housed within the first stage regulator and visible to the user to indicate thereto the pressure of the medium pressure gas.
2. Apparatus according to Claim 1, wherein the first stage regulator comprises a body defining an internal dry chamber, an inlet port in the chamber for receiving high pressure gas from a source thereof, a valve assembly to reduce the high pressure gas to medium pressure gas in the chamber, an outlet port for the medium pressure gas, and a hydrostatic transmitter responsive to an increase in ambient water pressure and adapted to move within the body accordingly to increase the supply of medium pressure gas to the outlet port, the monitoring means being contained within the body of the first stage regulator,

3. Breathing apparatus according to Claim 1, wherein the monitoring means is a strain gauge.
4. Breathing apparatus according to Claim 3, wherein the indicator is comprised by means providing a visual read-out, and connected to the strain gauge.
5. Breathing apparatus according to Claim 2, wherein the monitoring means is associated with the hydrostatic transmitter and movable therewith within the body.
6. Breathing apparatus according to Claim 1, wherein the indicator is in the form of a pressure module comprising a printed circuit board to which is connected a liquid crystal display.
7. Breathing apparatus according to Claims 2, wherein the indicator is in the form of a pressure module comprising a printed circuit board to which is connected a liquid crystal display; the monitoring means is a strain gauge; and the pressure module is connected electrically to the strain gauge by means of a conductor passing along the hydrostatic transmitter whereby the strain gauge and pressure module are mounted on opposed ends thereof respectively.
8. Breathing apparatus according to Claim 6, wherein the pressure module has a removable transparent cover to protect electronic circuitry of the module, and a battery mounted on and connected to the pressure module.

9. Breathing apparatus according to Claim 8, wherein the removable cover includes a magnifier.
10. Breathing apparatus according to Claim 6, wherein the pressure module includes electronic circuitry adapted to deactivate the indicator after an initial period of indication.
11. Breathing apparatus according to Claim 1, wherein the indicator is adapted to provide an indication of the present date.
12. Breathing apparatus according to Claim 1, wherein the indicator is adapted to provide an indication of a period when a service is due.
13. Breathing apparatus according to Claim 1, wherein the indicator is adapted to provide an indication of real time.
14. Self-contained underwater breathing apparatus comprising a second stage pressure regulator to reduce a medium pressure gas to a pressure suitable for breathing, and adapted for connection to a first stage pressure regulator itself adapted for connection to a breathing gas supply cylinder, the first stage regulator serving to reduce the pressure of gas in the gas supply cylinder to a medium pressure gas; characterised by means contained within the second stage regulator to monitor the pressure of said medium pressure gas and to transmit a signal representative thereof to an indicator housed within the second stage regulator and visible to the user to indicate thereto the pressure of the medium pressure gas.

15. Self-contained underwater breathing apparatus comprising a hose adapted for connection between a first stage gas pressure regulator to reduce the pressure of gas supplied from a gas supply cylinder to a medium pressure gas, and a second stage gas pressure regulator to reduce the medium pressure gas to a pressure suitable for breathing; characterised by means contained within the hose to monitor the pressure of said medium pressure gas therein and to transmit a signal representative of the medium pressure gas to an indicator housed within the hose and visible to the user to indicate thereto the pressure of the medium pressure gas in the hose.